DAVID Y. IGE
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD/CWB

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

08019PSS.20a
DATE: August 13, 2020
NPDES PERMIT NO. HI 0020877

FACT SHEET: APPLICATION FOR RENEWAL OF NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND ZONE OF MIXING (ZOM) TO DISCHARGE TO MAMALA BAY, PACIFIC OCEAN, WATERS OF THE UNITED STATES

PERMITTEE: CITY AND COUNTY OF HONOLULU, DEPARTMENT OF ENVIRONMENTAL SERVICES

FACILITY: HONOULIULI WASTEWATER TREATMENT PLANT (WWTP)

FACILITY MAILING ADDRESS
City and County of Honolulu
Honouliuli WWTP
1000 Uluohia St, Suite 308
Kapolei, HI 96707
Contact: Wayne Salas
Wastewater Regional Superintendent
Phone No: (808) 768-4474

PERMITTEE MAILING ADDRESS
City and County of Honolulu
1000 Uluohia Street, Suite 308
Kapolei, Hawaii 96707
Contact: Lori M.K. Kahikina, Director
Dept. of Environmental Services
City and County of Honolulu
Phone No: (808) 768-3486

FACILITY STREET ADDRESS
City and County of Honolulu
Honouliuli WWTP
91-1000 Geiger Road
Ewa Beach, Hawaii 96706

Table of Contents

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of the draft permit.

A. Permit Information. The following table summarizes administrative information related to the Honouliuli Wastewater Treatment Plant (facility).

Table F-1. Facility Information

Permittee	City and County of Honolulu
Name of Facility	Honouliuli Wastewater Treatment Plant
Facility Address	91-1000 Geiger Road Ewa Beach, HI 96706
Facility Contact, Title, and Phone	Wayne Salas, Wastewater Regional Superintendent, (808) 768-4474
Authorized Person to Sign and Submit Reports	Lori M.K. Kahikina, Director, (808) 768-3486
Mailing Address	1000 Uluohia St, Suite 308 Kapolei, HI 96707
Billing Address	Same as mailing address
Type of Facility	Wastewater Treatment Plant
Industrial Storm Water	Yes – regulated by NPDES Permit No. HIS000002
Pretreatment Program	Yes
Recycling Requirements	Not Applicable
Facility Design Flow	38 million gallons per day (MGD)
Receiving Waters	Mamala Bay, Pacific Ocean
Receiving Water Type	Marine
Receiving Water Classification	Class A Wet Open Coastal Waters (HAR Section 11-54-06(b)(2)(B))

1. NPDES Permit No. HI 0020877 for the Honouliuli Wastewater Treatment Plant, including ZOM, became effective on March 30, 2014, and expired on February 27, 2019. Since its issuance, the permit underwent three minor modifications on April 17, 2014, April 28, 2014, and October 29, 2014, and two major modifications on September 10, 2015 and January 16, 2019. The Permittee reapplied for an NPDES permit on August 30, 2018. The Hawaii Department of Health (DOH) administratively extended the NPDES permit, including the ZOM, on February 27, 2019, pending the reapplication processing.

2. The DOH proposes to issue a permit to discharge to the waters of the State until September 30, 2025, and has included in the proposed permit those terms and conditions which are necessary to carry out the provisions of the Federal Water Pollution Control Act (P.L. 92-500), Federal Clean Water Act (CWA) of 1988 (P.L. 95-217) and Chapter 342D, Hawaii Revised Statutes.

B. Facility Setting

1. Facility Operation and Location. The Permittee owns and operates the facility, located in Ewa Beach, Hawaii, on the island of Oahu. The facility has a design dry weather flow capacity of 38 MGD and provides primary and some secondary treatment of wastewater for a population of approximately 335,000 people in the

western portion of the Mamala Bay Service District. All incoming influent receives primary treatment consisting of preliminary influent screening, grit removal, pre-aeration, and primary clarification. After primary treatment, flow is separated into two streams. One stream is sent straight to effluent screens and does not receive additional treatment; the second stream of up to 13 MGD of primary treated wastewater is routed through two adjustable V-notch weir gates to secondary treatment. Secondary treatment includes biotowers, solids contact, and secondary clarification. Some of the secondary-treated effluent from the biotowers is recycled to the biotower pumping station while the remaining effluent flows to the solids contactor. After secondary clarification, the secondary-treated effluent flows through two Parshall flumes. Up to 10 MGD of secondary-treated effluent may then be directed to the tertiary treatment facility to produce R1 reuse water and reverse osmosis (RO) reuse water, while the remaining 3 MGD of secondary-treated wastewater is routed to the effluent screens. The secondary-treated effluent mixes with the primary effluent, tertiary R1 effluent, and brine prior to effluent screening. The combined effluent then flows through fine screens and finally to the Barbers Point Ocean Outfall (Outfall Serial No. 001) in Mamala Bay, Pacific Ocean, at Latitude 21°16'47" N and Longitude 158°01'40" W. The tertiary level treatment facility is managed by the Honolulu Board of Water Supply. Operations at the tertiary facility are covered by a separate permit.

Sludge processing at the facility consists of digestion and thickening by gravity thickeners, and dewatering by centrifuge. Solids are hauled to H-Power for waste to energy conversion and is only disposed of in a landfill when H-Power is not available.

Outfall Serial No. 001 is located at a water depth of about 200 feet below mean lower low water (MLLW) and about 10,525 feet from the shoreline. The diffuser section of the outfall is 1,750 feet long and consists of three sections that range from 48 inches to 78 inches in diameter. The diffuser section of the outfall has 146 diffuser ports that range in size from 3.41 inches to 3.74 inches in diameter and two ends ports with a 6-inch diameter.

Storm water from the facility is regulated under the City and County of Honolulu's municipal separate storm sewer permit, NPDES Permit No. HI S000002.

Figure 1 of the draft permit provides a map showing the location of the facility. Figure 2 of the draft permit provides a map of the ZOM, Zone of Initial Dilution (ZID), and receiving water monitoring station locations.

2. Receiving Water Classification

Mamala Bay, Pacific Ocean, is designated as "Class A Wet Open Coastal Waters" under Hawaii Administrative Rules (HAR), Section 11-54-06(b)(2)(B). Protected beneficial uses of Class A waters include recreation, aesthetic enjoyment, and the protection and propagation of fish, shellfish, and wildlife.

3. Ocean Discharge Criteria

The DOH has considered the Ocean Discharge Criteria, established pursuant to Section 403(c) of the CWA for the discharge of pollutants into the territorial sea, the waters of the contiguous zone, or the oceans. The United States Environmental Protection Agency (EPA) has promulgated regulations for Ocean Discharge Criteria in 40 Code of Federal Regulations (CFR) 125, Subpart M. The DOH has determined that the discharge will not cause unreasonable degradation to the marine environment. Based on the current information, the DOH proposes to issue the draft permit.

4. Impaired Water Bodies on CWA 303(d) List

CWA Section 303(d) requires states to identify specific water bodies where water quality standards (WQS) are not expected to be met after implementation of technology-based effluent limitations on point sources.

On August 16, 2018, the EPA approved the 2018 State of Hawaii Water Quality Monitoring and Assessment Report, which includes the 2018 303(d) List of Impaired Water Bodies in the State of Hawaii.

Mamala Bay (Fort Kamehameha Offshore) is not listed as an impaired water body for any pollutants on the 2018 303(d) list; however, the impairment status of chlorophyll a is unknown. Currently, this section of Mamala Bay is reported as a Category 2, 3, and 5 waterbody. At present, no Total Maximum Daily Loads (TMDLs) have been established for this waterbody.

5. Summary of Existing Effluent Limitations and Monitoring Data

Effluent limitations contained in the existing permit for discharges from Outfall Serial No. 001 and representative monitoring data from April 2014 through December 2018, are presented in the following tables.

Table F-2. Historic Effluent Limitations and Monitoring Data – Outfall Serial No. 001

Parameter	Units	Effluent Limitation			Reported Data[1]		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Flow	MGD	[2]	[2]	[2]	25.7	44.6	47.2
Biochemical Oxygen Demand (5-Day @ 20 Deg. C) (BOD_5)	mg/L	30[3]	45[3]	[2]	141	146	184
	lbs/day	9,508[3]	14,261[3]	[2]	27,434	30,042	37,050
	mg/L	161[4]	166[4]	[2]	141	146	184
	lbs/day	53,679[4]	55,424[4]	[2]	27,434	30,042	37,050
	% Removal	As a monthly average, not less than 85 percent removal efficiency from influent stream[3]			55[5]		
	% Removal	As a monthly average, not less than 30 percent removal efficiency from influent stream[4]			55[5]		

Parameter	Units	Effluent Limitation			Reported Data[1]		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Total Suspended Solids (TSS)	mg/L	30[3]	45[3]	[2]	48.8	55.4	65
	lbs/day	9,508[3]	14,261[3]	[2]	8,777	9,856	19,268
	mg/L	50[4]	53[4]	[2]	48.8	55.4	65
	lbs/day	16,721[4]	17,580[4]	[2]	8,777	9,856	19,268
	% Removal	As a monthly average, not less than 60 percent removal efficiency from influent stream[3]			84[5]		
	% Removal	As a monthly average, not less than 60 percent removal efficiency from influent stream[4]			84[5]		

1 Source: Monthly Discharge Monitoring Reports (DMRs) and daily data submitted by the Permittee from April 2014 through December 2018. This data represents the highest reported value over the monitoring period specified.
2 No effluent limitations for this pollutant in the existing permit, only monitoring required.
3 Final effluent limitations contained in the existing permit.
4 Interim effluent limitations contained in the 2010 Consent Decree. Interim effluent limitations are applicable until the facility is in compliance with secondary treatment standards and became effective in December 2010.
5 Data represent minimum percent removal reported.

Table F-3. Historic Effluent Limitations and Monitoring Data – Outfall Serial No. 001

Parameter	Units	Effluent Limitation			Reported Data[1]		
		Average Annual	Average Monthly	Maximum Daily	Average Annual	Average Monthly	Maximum Daily
pH	standard units	Not less than 6.0 nor greater than 9.0			6.27 – 7.88		
Chronic Toxicity *Tripneustes gratilla*[2]	Pass/Fail	--	--	Pass[3]	--	--	Fail[4]
Chronic Toxicity *Ceriodaphnia dubia*[2]	Pass/Fail	--	--	Pass[3]	--	--	NR
Chronic Toxicity *Atherinops affinis*[2]	Pass/Fail	--	--	Pass[3]	--	--	NR
Enterococci	CFU/100 mL	--	17,115[5]	26,910[6]	--	552,797[5]	2,300,000[6]
		--	898,087[5,7]	1,155,089[6,7]	--	552,797[5]	2,300,000[6]
Total Nitrogen	µg/L	[8]	[8]	--	34,445	37,600	--
Total Phosphorus	µg/L	[8]	[8]	--	4,655	5,340	--
Ammonia Nitrogen	µg/L	[8]	[8]	--	24,958	28,100	--
Nitrate + Nitrite Nitrogen	µg/L	[8]	[8]	--	1,498	7,905	--
Temperature	°C	[8]	[8]	--	27.9	29.6	--
Total Oil and Grease	mg/L	[8]	[8]	--	18	26	--

Parameter	Units	Effluent Limitation			Reported Data[1]		
		Average Annual	Average Monthly	Maximum Daily	Average Annual	Average Monthly	Maximum Daily
Total Petroleum Hydrocarbons	mg/L	[8]	[8]	--	6.8	10.3	--
Fats, Oils, and Grease	mg/L	[8]	[8]	--	11.2	17.3	--
Turbidity	NTU	[8]	[8]	--	50.4	67.4	--

NR – Not Reported

1 Source: Highest reported values from monthly DMRs submitted by the Permittee from April 2014 through December 2018.

2 The Permittee was required to test one species of the three chronic test species (*T. gratilla, C. dubia*, and *A. affinis*) each calendar month such that each species was tested at least once per quarter. This requirement was part of a modification of the previous permit that became effective February 1, 2019.

3 "Pass", as described in Section B.3. of the previous permit.

4 Permittee reported seven "Fail" results during the term of the previous permit.

5 Expressed as a monthly geometric mean.

6 Expressed as a single sample maximum. The daily maximum effluent limitation shall not be exceeded in more than ten percent (10%) of samples taken within the same 30-day interval in which the geometric mean was calculated.

7 Interim effluent limitations effective until January 1, 2024.

8 No effluent limitations for this pollutant in the previous permit, only monitoring required.

6. Compliance Summary. The following table lists effluent limitation violations as identified in the monthly, quarterly, and annual DMRs submitted by the Permittee from April 2014 to December 2018.

Table F-4. Summary of Compliance History

Monitoring Period	Violation Type	Pollutant	Reported Value	Permit Limitation	Units
4/1/15 – 4/30/15	Weekly Average	TSS	55	53	mg/L
5/1/15 – 5/31/15	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail
11/1/16 – 11/30/16	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail
1/1/17 – 1/31/17	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail
7/1/17 – 7/31/17	Daily Maximum	Enterococci	1,400,000	1,155,089	CFU/100 mL
1/1/18 – 1/31/18	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail
3/1/18 – 3/31/18	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail
5/1/18 – 5/31/18	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail
6/1/18 – 6/30/18	Daily Maximum	Enterococci	2,300,000	1,155,089	CFU/100 mL
12/1/18 – 12/31/18	Daily Maximum	Chronic Toxicity	Fail	Pass	Pass/Fail

a. Inspections Conducted. The DOH, with PG Environmental, conducted a Compliance Evaluation Inspection (CEI) of the facility on April 19, 2017 and March 29, 2019. Specific comments from the inspections and the Permittee's responses are listed in Attachments 1 and 2, respectively.

b. Facility Incidents. The Permittee reported approximately 42 spills from April 2014 until July 2018.

c. Enforcement Actions. On November 24, 2014, the Permittee received a Notice of Apparent Violation (NAV) from DOH notifying them of an apparent violation of the terms of the Permittee's NPDES permit, which were noted during a Pretreatment Compliance Audit conducted from June 16-18, 2014. The NAV has since been closed.

7. December 2010 United States of America v. City and County of Honolulu Consent Decree (2010 Consent Decree) and Planned Changes. On December 17, 2010, the U.S. District Court for the District of Hawaii entered a Consent Decree in *United States of America v. City and County of Honolulu* to resolve litigation between the Permittee, the United States, State of Hawaii and certain other parties. Under the 2010 Consent Decree, collection system work is to occur through 2020 and requires the Permittee to complete construction of Honouliuli facilities necessary to comply with secondary treatment standards by no later than June 1, 2024, and sets forth interim compliance milestones and interim effluent limitations for BOD_5 and TSS until the facility achieves compliance with secondary treatment standards. The 2010 Consent Decree supersedes requirements in the draft permit.

The deadlines for completing the upgrades are as follows.

Table F-5. 2010 Consent Decree Deadlines

Deadline	Requirement
1/1/2017	Execute a design contract and issue a notice to proceed with design.
1/1/2019	Execute a construction contract and issue a notice to proceed with construction.
6/1/2024	Complete construction of facilities to comply with secondary treatment standards.

A summary of the 2010 Consent Decree interim effluent limitations is provided in Appendix 1 to this Fact Sheet.

During the term of the proposed permit, the Permittee plans to construct a new wet sludge receiving facility to replace the existing wet sludge receiving station. The new wet sludge receiving facility is expected to be operational from 2020. The Permittee is also planning the following changes to the facility:

- Construction of a new dry sludge receiving station to receive and carry sludge cake directly to the new belt dryers;
- Replacement of the existing septage receiving facility;
- Replacement of the existing dewatering centrifuges with three new centrifuges to add to the solids digestion and dewatering capacity, and
- Installation of two new belt dryer units.

The Permittee's new solids handling plan is expected to be operational by 2021.

Additionally, the Permittee plans to decommission the biotowers by 2024 and replace them with new bioreactors and secondary clarifiers. The bioreactors will have a total volume of six million gallons and consist of two parallel trains, each with four step-feed passes. Each of the eight passes will be comprised of five zones consisting of two anoxic zones with mixers, and three aerobic zones with tapered diffused aeration. Secondary clarification will consist of six, 140-ft diameter circular clarifiers with an approximately 20-ft sidewater depth.

C. Applicable Plans, Policies, and Regulations.

1. **Hawaii Administrative Rules, Chapter 11-54.** On November 12, 1982, the HAR Title 11, Department of Health, Chapter 54 became effective (hereinafter HAR Chapter 11-54). HAR Chapter 11-54 was amended and compiled on October 6, 1984; April 14, 1988; January 18, 1990; October 29, 1992; April 17, 2000; October 2, 2004; June 15, 2009; October 21, 2012; December 6, 2013; and the most recent amendment was on November 15, 2014. HAR Chapter 11-54 establishes beneficial uses and classifications of state waters, the state antidegradation policy, zones of mixing standards, and water quality criteria that are applicable to Mamala Bay.

   Requirements of the draft permit implement HAR Chapter 11-54.

2. **Hawaii Administrative Rules, Chapter 11-55.** On November 27, 1981, HAR Chapter 11-55 became effective. HAR Chapter 11-55 was amended and compiled on October 29, 1992; September 22, 1997; January 6, 2001; November 7, 2002; August 1, 2005; October 22, 2007; June 15, 2009, October 21, 2012; December 6, 2013; November 15, 2014; and the most recent amendment was on February 9, 2019. HAR Chapter 11-55 establishes standard permit conditions and requirements for NPDES permits issued in Hawaii.

   Requirements of the draft permit implement HAR Chapter 11-55.

3. **State Toxics Control Program.** NPDES regulations at 40 CFR 122.44(d) require permits to include water quality-based effluent limitations (WQBELs) for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a WQS. The *State Toxics Control Program: Derivation of Water Quality-Based Discharge Toxicity Limits for Biomonitoring and Specific Pollutants* (STCP) was finalized in April 1989, and provides guidance for the development of water quality-based toxicity control in NPDES permits by developing the procedures for translating water quality standards in HAR Chapter 11-54, into enforceable NPDES permit limitations. The STCP identifies procedures for calculating permit limitations for specific toxic pollutants for the protection of aquatic life and human health.

   Guidance contained in the STCP was used to determine effluent limitations in the draft permit.

D. Rationale for Effluent Limitations and Discharge Specifications. The CWA requires point source Permittees to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44(a), permits are required to include applicable technology-based limitations and standards; and at 40 CFR 122.44(d), permits are required to include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using one or more of three methods described at 40 CFR 122.44(d) – 1) WQBELs may be established using a calculated water quality criterion derived from a proposed state criterion or an explicit state policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using EPA criteria guidance published under CWA Section 304(a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

1. Technology-Based Effluent Limitations

a. Scope and Authority. Section 301(b) of the CWA and 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this draft permit must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133.

Regulations promulgated in 40 CFR 125.3(a)(1) require technology-based effluent limitations for municipal Permittees to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for publicly owned treatment works (POTWs) (as defined in CWA Section 304(d)(1)). CWA Section 301(b)(1)(B) requires that such treatment works must, at a minimum, meet effluent limitations based on secondary treatment as defined by the EPA Administrator.

Based on this statutory requirement, EPA developed secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

b. Applicable Technology-Based Effluent Limitations. At 40 CFR 133 in the Secondary Treatment Regulations, EPA has established the minimum required level of effluent quality attainable by secondary treatment shown in Table F-6 below. The standards in Table F-6 are applicable to the facility and therefore established in the draft permit as technology-based effluent limitations.

Table F-6. Applicable Technology-Based Effluent Limitations

Parameter	Units	30-Day Average	7-Day Average
BOD_5[1]	mg/L	30	45
TSS[1]	mg/L	30	45
pH	standard units	6.0 – 9.0	

[1] The 30-day average percent removal shall not be less than 85 percent.

However, Paragraph 32.b of the 2010 Consent Decree establishes interim effluent limitations and monitoring requirements for the facility for flow, BOD_5 and TSS. Paragraph 32 (b) of the 2010 Consent Decree specifically states, *"From the Effective Date of this Consent Decree until the final compliance milestone set pursuant to Paragraph 30 for the Honouliuli WWTP, CCH shall comply with the requirements and interim effluent limits for TSS and BOD_5 set forth above for the Honouliuli WWTP, notwithstanding any final effluent limitations for TSS and BOD_5 set forth in CCH's applicable NPDES permit for the Honouliuli WWTP; provided, however, that this Consent Decree shall not affect the force or effect of any other effluent limitations, or monitoring and reporting requirements, or any other terms and conditions of its applicable NPDES permit."*

The DOH is recognizing the interim limits for BOD_5 and TSS as set forth in the 2010 Consent Decree, as those interim limits were performance-based and established to ensure that a minimum level of treatment is maintained until the treatment plant is upgraded to meet secondary treatment requirements.

2. Water Quality-Based Effluent Limitations (WQBELs).

a. Scope and Authority. NPDES regulations at 40 CFR 122.44(d) require permits to include WQBELs for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard (reasonable potential). As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level that will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

The process for determining reasonable potential and calculating WQBELs, when necessary, is intended to protect the receiving waters as specified in HAR Chapter 11-54. When WQBELs are necessary to protect the receiving waters, the DOH has followed the requirements of HAR Chapter 11-54, the STCP, and other applicable State and federal guidance policies to determine WQBELs in the draft permit.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELS must be established in accordance with the requirements of 40 CFR 122.44(d)(1)(vi), using (1) EPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information.

b. Applicable Water Quality Standards. The beneficial uses and water quality standards that apply to the receiving waters for this discharge are from HAR Chapter 11-54.

(1) Basic Water Quality Criteria Applicable to All Waters. HAR Section 11-54-4(c)(3) specifies numeric aquatic life standards for 72 toxic pollutants and human health standards for 61 toxic pollutants, as well as narrative standards for toxicity. Effluent limitations and provisions in the draft permit are based on available information to implement these standards.

(a) Saltwater Standards. The facility discharges to the Pacific Ocean, which is classified as a marine Class A Dry Open Coastal Water in HAR Chapter 11-54. As specified in HAR Chapter 11-54, saltwater standards apply when the dissolved inorganic ion concentration is above 0.5 ppt. As such, a reasonable potential analysis (RPA) was conducted using saltwater standards.

(b) Human Health Standards. Additionally, fish consumption water quality standards were also used in the RPA to protect human health. Where both saltwater standards and human health standards are available for a particular pollutant, the more stringent was used in the RPA.

(c) Total Recoverable Metals. 40 CFR 122.45(c) requires effluent limitations for metals to be expressed as total recoverable metal. Since water quality standards for metals are expressed in the dissolved form in HAR Chapter 11-54, factors or translators must be used to convert metal concentrations from dissolved to total recoverable. Default EPA conversion factors were used to convert the applicable dissolved criteria to total recoverable.

(d) Receiving Water Hardness. HAR Chapter 11-54 contains water quality criteria for six metals that vary as a function of hardness in freshwater. A lower hardness results in a lower freshwater WQS. The metals with hardness dependent standards include cadmium, copper, lead, nickel, silver, and zinc. Ambient hardness values are used to calculate freshwater WQSs that are hardness dependent. Since saltwater standards are used for the RPA, the receiving water hardness was not taken into consideration when determining reasonable potential.

(2) Specific Water Quality Criteria for the Pacific Ocean. HAR Section 11-54-6(b)(3) specifies water quality criteria for nutrients, pH, dissolved oxygen, temperature and salinity for the Pacific Ocean. Criteria for nutrients are classified as "not to exceed the given value more than two per cent of the time," "not to exceed the given value more than ten per cent of the time" and "geometric mean not to exceed the given value." Other parameters include acceptable ranges based on the ambient values.

c. Determining the Need for WQBELs. NPDES regulations at 40 CFR 122.44(d) require effluent limitations to control all pollutants which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. Assessing whether a pollutant has reasonable potential is the fundamental step in determining whether or not a WQBEL is required.

(1) Reasonable Potential Analysis (RPA)

Toxic Pollutants. Using the methods described in the EPA's Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001, 1991, the TSD), the effluent data for toxic pollutants from Outfall Serial No. 001 were analyzed to determine if the discharge demonstrates reasonable potential to exceed the applicable WQS. The RPA for pollutants with WQS specified in HAR Section 11-54-4, based on the TSD, combines knowledge of effluent variability as estimated by a coefficient of variation with the uncertainty due to a limited number of data to project an estimated maximum receiving water concentration as a result of the effluent. The estimated receiving water concentration is calculated as the upper bound of the expected lognormal distribution of effluent concentrations at a high confidence level. The projected maximum receiving water concentration, after consideration of dilution, is then compared to the most stringent applicable WQS in HAR Chapter 11-54, to determine if the pollutant has reasonable potential. The projected maximum receiving water concentration has reasonable potential if it cannot be demonstrated with a high confidence

level that the upper bound of the lognormal distribution of effluent concentrations is below the receiving water standards.

The projected maximum receiving water concentration for non-carcinogens is calculated using the following equation:

$$\text{Maximum RWC} = (\text{Multiplier} * X_{Max}) / (1 + D)$$

Where:

Maximum RWC	=	Maximum receiving water concentration
Multiplier	=	Multiplier calculated using methods in Section 3.3.2 of the TSD (99% multiplier for municipal facilities and 95% multiplier for industrial facilities)
X_{Max}	=	Highest observed pollutant concentration (µg/L)
D	=	Parts receiving water to effluent

The initial dilution at the ZID is used as D for determining reasonable potential for non-carcinogens.

The projected maximum receiving water concentration for carcinogens is calculated using the following equation:

$$\text{Maximum ARWC} = AX_{Max} / (1 + D)$$

Where:

Maximum ARWC	=	Maximum annual average receiving water concentration
AX_{Max}	=	Highest observed annual average pollutant concentration (µg/L)
D	=	Parts receiving water to effluent

The average dilution at the ZID is used as D for determining reasonable potential for carcinogens.

Due to the long exposure time associated with human health criteria for carcinogens (e.g., 70 years), the RPA for carcinogens was performed based on an observed maximum annual average value compared to the applicable criteria. The use of the maximum annual average assumes an exposure period that is much shorter than the period of exposure for the criteria and is reasonable to assume will be greater than the long-term average over the period of exposure for the criteria. As such, the use of an annual average in

evaluating reasonable potential for the most stringent criteria for carcinogens is protective of water quality.

The RPA followed the guidance set forth by the EPA in *EPA Region 10 Guidance for WQBELs Below Analytical Detection/Quantitation Level, EPA*, (1996) in its treatment of data that is detected at limits below the Minimum Level (i.e., the level at which the parameter may be accurately quantified) or the Detection Limit. Where the maximum annual average concentration is greater than the applicable WQS from HAR Chapter 11-54, then reasonable potential exists for the pollutant, and effluent limitations are established.

Nutrients. For nutrients, the most stringent WQS specified in HAR Section 11-54-6, are provided as geometric means and exceedances of these WQS are less sensitive to effluent variability. The RPA was conducted by directly comparing the maximum annual geometric mean of combined ZOM station data to the applicable geometric mean listed in HAR Section 11-54-6.

(2) Effluent Data. The RPA for toxic pollutants was based on effluent monitoring data submitted to the DOH in DMRs from January 2014 through December 2018. The RPA for nutrients was based on receiving water data submitted to the DOH in DMRs from January 2014 through December 2018.

(3) Dilution. The STCP discusses dilution, defined as the reduction in the concentration of a pollutant or discharge which results from mixing with the receiving waters, for submerged outfalls and high-rate discharges. The STCP states that minimum dilution is used for establishing effluent limitations based on chronic criteria and human health standards for non-carcinogens, and average conditions is used for establishing effluent limitations based on human health standards for carcinogens.

The previous permit established a minimum initial dilution of 207:1 for chronic aquatic toxicity and fish consumption criteria for non-carcinogens and an average initial dilution of 489:1 for fish consumption criteria for carcinogens. These dilutions were established based on the Permittee's 2017 Honouliuli Dilution Study. The study utilized NRFIELD, the latest version of the Visual PLUMES model for dilution calculations, proposing a set of new dilution ratios. The model evaluated the minimum dilution and average dilution in the initial mixing zone where jet and buoyant near field processes occur, as well as the far field dilution (with and without the bacterial decay process) using the most appropriate available data.

For initial mixing, the model considered more recent ambient and effluent data and model input values that accurately reflect current operating and environmental conditions, including:

- Ocean current measurements recorded at 20-minute intervals taken over a 11-month period from February 25, 2010 through January 31, 2011;
- Quarterly ambient conductivity, temperature, and depth profile (CTD) data from 2012 through 2016;
- Effluent temperature and salinity data; and
- Peak 3-hour flow rate data from 2012-2016 as well as the average growth rate for each year to establish the projected 3-hour peak flow of 39.9 MGD for 2021.

NRFIELD was run using profiles from 10 monitoring stations nearest to the diffuser, collected quarterly from 2012 to 2016, a total of 200 profiles. Model runs were performed using five (5) different currents. The facility's projected 3-hour peak flow was used to model the minimum initial dilution and design flow was used to model the average initial dilution. The 10th percentile dilution factor from each current run for minimum initial dilution and geometric mean from each current run for average initial dilution were selected. The frequency of the currents was used to calculate a weighted average of each of the dilution factors.

For the development of this permit, the DOH retained the critical short-term initial dilution of 207:1 for chronic aquatic toxicity and fish consumption criteria for non-carcinogens, and 489:1 for fish consumption criteria for carcinogens. Additionally, the DOH is establishing an average dilution of 577:1 at the ZOM.

HAR Section 11-54-9 allows the use of a ZOM to demonstrate compliance with WQS. ZOMs consider initial dilution, dispersion, and reactions from substances which may be considered to be pollutants. For HAR Section 11-54-6 parameters, reasonable potential to contribute to an exceedance of WQS is most reasonably assessed by comparing monitoring data at the edge of the ZOM to the applicable WQS. If an annual geometric mean at the edge of a ZOM exceeds the applicable WQS, the Permittee is determined to have reasonable potential for the pollutant. If an exceedance of WQS is not observed at the edge of the ZOM, it is assumed that sufficient dilution and assimilative capacity exists to meet WQS at the edge of the ZOM.

Assimilative capacity for pollutants with reasonable potential is evaluated for HAR Section 11-54-6 pollutants by aggregating all control station data annually and comparing the annual geometric means to the applicable WQS. If an annual geometric mean exceeds 90 percent of the WQS, assimilative capacity is determined to be insufficient and dilution may not be granted. In order to determine whether granting dilution was appropriate, assimilative capacity for total nitrogen, ammonia nitrogen, and total phosphorus was analyzed using data from control stations HB1,

HB6, and HB7. It was determined that assimilative capacity exists in the receiving water for all nutrients.

(4) Summary of RPA Results. The maximum effluent concentrations from the DMRs over the current permit term and the NPDES Application Form 2C, maximum projected receiving water concentration after dilution, the applicable HAR Sections 11-54-4(b)(3) and 11-54-6(b)(3) WQS, and results of the RPA for pollutants discharged from Outfall Serial No. 001 is presented in Table F-7, below. Only pollutants detected in the discharge are presented in Table F-7. All other pollutants were not detected and therefore, no reasonable potential exists.

Data for toxic pollutants is based on semi-annual reports from 2014 through 2018. For effluent results that were reported below the method detection limit for the analytical method, zero was used for those data points when determining an annual average. The use of zero for results below the method detection limit for the purposes of an RPA is consistent with EPA Region 10's *Guidance for WQBELs Below Analytical Detection/Quantification Level*, EPA, 1996.

Reasonable potential for total nitrogen, ammonia nitrogen, and total phosphorus was evaluated using receiving water data from January 2014 through December 2018. Because the criteria for these parameters are calculated using a geometric mean, the use of zero for non-detect results, consistent with EPA Region 10 guidance, is not possible. The substitution method was utilized to account for non-detects when calculating a geometric mean. During the development of the draft permit, a substitution value of one-quarter of the method detection limit was used, which is closer to zero than previously used and consistent with the intent of the EPA guidance, but still allows for the calculation of a geometric mean.

Table F-7. Summary of RPA Results

Parameter	Units	Number of Samples	Dilution	Maximum Effluent Concentration	Maximum Projected Concentration	Applicable Water Quality Standard	RPA Results
Antimony, Total Recoverable	µg/L	5	207:1	0.49	0.010	15,000	No
Arsenic, Total Recoverable	µg/L	9	207:1	0.51	0.0080	36	No
Beryllium	µg/L	9	489:1	0.030[1]	0.000061	0.038	No
Chromium, Total Recoverable[2]	µg/L	9	207:1	3.1	0.080	50.35	No
Copper, Total Recoverable	µg/L	9	207:1	34	0.52	3.5	No
Lead, Total Recoverable	µg/L	9	207:1	0.93	0.016	5.89	No

Parameter	Units	Number of Samples	Dilution	Maximum Effluent Concentration	Maximum Projected Concentration	Applicable Water Quality Standard	RPA Results
Mercury, Total Recoverable	µg/L	9	207:1	0.11	0.0020	0.029	No
Nickel, Total Recoverable	µg/L	9	207:1	5.1	0.080	8.38	No
Selenium, Total Recoverable	µg/L	9	207:1	6.4	0.098	71.1	No
Silver, Total Recoverable	µg/L	4	207:1	0.23	0.0050	2.71	No
Thallium, Total Recoverable	µg/L	9	207:1	0.11	0.0020	16.0	No
Zinc, Total Recoverable	µg/L	8	207:1	56	0.89	90.91	No
Bis(2-Ethylhexyl) Phthalate	µg/L	9	207:1	0.67	0.010	16,000	No
Phthalate Esters Dibutyl	µg/L	9	207:1	0.67	0.010	50,000	No
Chlordane	µg/L	18	489:1	0.066[1]	0.000135	0.00016	No
Chloroform	µg/L	9	489:1	0.43[1]	0.00088	5.1	No
Dieldrin	µg/L	18	489:1	0.0098[1]	0.000020	0.000025	No
Benzene	µg/L	9	489:1	0.047[1]	0.000095	13	No
Ethylbenzene	µg/L	9	207:1	0.15	0.0020	140	No
Malathion	µg/L	9	207:1	0.30	0.0046	0.10	No
Parathion	µg/L	9	207:1	0.024	0.00037	No Criteria	Inconclusive
Phenol	µg/L	9	207:1	5.7	0.090	170	No
Toluene	µg/L	9	207:1	3.5	0.050	2,100	No
Tetrachloroethylene	µg/L	9	489:1	0.059[1]	0.00012	2.90	No
Total Nitrogen	µg/L	228[3]	NA	126[4]	126[5]	150.00[5]	No
Ammonia Nitrogen	µg/L	240[3,]	NA	3.2[4]	3.2[5]	3.5[5]	No
Total Phosphorus	µg/L	228[3]	NA	8.8[4]	8.8[5]	20.00[5]	No

[1] Expressed as an annual average.
[2] WQS expressed as Chromium VI.
[3] Data collected at ZOM monitoring stations HM1, HM2, HM3, and HM4.
[4] Maximum annual geometric mean at the edge of the ZOM. The maximum annual geometric mean was calculated using data collected at monitoring stations HM1, HM2, HM3, and HM4.
[5] Expressed as annual geometric mean.

(5) Reasonable Potential Determination.

(a) Constituents with Limited Data. In some cases, reasonable potential cannot be determined because effluent data are limited. The draft permit requires the Permittee to continue to monitor for these constituents in the effluent using analytical methods that provide the lowest available detection limitations. When additional data become available, further RPAs will be conducted to determine whether to add numeric effluent limitations to this draft permit or to continue monitoring.

- Aluminum
- Nitrosodiethylamine-N

- Chlorine
- Chlorpyrifos
- Metabolite TDE
- Nitrosamines
- Nitrosodibutylamine-N
- Nitrosopyrrolidine-N
- Pentachlorobenzene
- Tetrachlorobenzene (1,2,4,5)
- Tetratchlorophenol (2,3,5,6)
- Tributyltin

(b) Pollutants with No Reasonable Potential. WQBELs are not included in this draft permit for constituents listed in HAR Sections 11-54-4(c)(3) and 11-54-6(b)(3) that do not demonstrate reasonable potential; however, monitoring for such pollutants is still required in order to collect data for future RPAs. Pollutants with no reasonable potential consist of those identified in Table F-7 or any pollutant identified in this section, Part D.2.c.(5)(b), or not discussed in Parts D.2.c.(5)(a) or D.2.c.(5)(c) of this Fact Sheet.

(c) Pollutants with Reasonable Potential - Enterococcus. Enterococcus concentrations up to 2,300,000 CFU/100 mL have been observed in the effluent, which exceed the applicable statistical threshold value (STV) of 130 CFU/100 mL and the geometric mean criteria of 35 CFU/100 mL with a dilution of 489:1 (9,655 and 3,492 CFU/100 mL, respectively). As such, reasonable potential for enterococcus has been determined and WQBELs have been established in the draft permit at Outfall Serial No. 001 for enterococcus.

The RPA for enterococcus is discussed in more detail in Part D.2.f. of this Fact Sheet.

d. WQBEL Calculations

Specific pollutant limits may be calculated for both the protection of aquatic life and human health.

(1) WQBELs Based on Aquatic Life Standards. The STCP categorizes a discharge from a facility into one of four categories: (1) marine discharges through submerged outfalls; (2) discharges without submerged outfalls; (3) discharges to streams; or (4) high-rate discharges. Once a discharge has been categorized, effluent limitations for pollutants with reasonable potential can be calculated, as described below.

(a) For marine discharges through submerged outfalls, the daily maximum effluent limitation shall be the product of the chronic water quality standard and the minimum dilution factor.

(b) For discharges without submerged outfalls, the daily maximum effluent limitation shall be the acute toxicity standard. More stringent limits

based on the chronic standards may be developed using Best Professional Judgment (BPJ).

(c) For discharges to streams, the effluent limitation shall be the most stringent of the acute standard and the product of the chronic standard and dilution.

(d) For high rate outfalls, the maximum limit for a particular pollutant is equal to the product of the acute standard and the acute dilution factor determined according to Section II.B.4 of the STCP. More stringent limits based on chronic standards may be developed using BPJ.

(2) WQBELs Based on Human Health Standards. The STCP specifies that the fish consumption standards are based upon the bioaccumulation of toxics in aquatic organisms followed by consumption by humans. Limits based on the fish consumption standards should be applied as 30-day averages for non-carcinogens and annual averages for carcinogens.

(3) Calculation of Pollutant-Specific WQBELs. The discharge from this facility is considered a marine discharge through a submerged outfall. Therefore, for pollutants with reasonable potential, the draft permit establishes, on a pollutant by pollutant basis, daily maximum effluent limitations based on saltwater chronic aquatic life standard after considering dilution and average monthly effluent limitations for non-carcinogens or annual average effluent limitations for carcinogens based on the human health standard after considering dilution. WQBELs established in the draft permit are discussed in detail below.

As discussed in Part D.2.c.(3) of this Fact Sheet, a minimum initial dilution of 207:1 and an average initial dilution of 489:1 have been established.

If the projected maximum receiving water concentration is greater than the applicable water quality standard from HAR Chapter 11-54, then reasonable potential exists for the pollutant and effluent limitations are established. Pollutants with reasonable potential are discussed below in detail.

e. pH. The Permittee was previously granted a ZOM for pH to comply with WQS for open coastal waters in HAR Section 11-54-6(b)(3). The technology-based effluent limitations of between 6.0 to 9.0 standard units at all times appear to be protective of water quality outside the ZOM and have been retained from the previous permit.

f. Enterococcus. The discharge consists of treated sewage which may contain pathogens at elevated concentrations, if not properly disinfected, sufficient to impact human health or the beneficial uses of the receiving water. To ensure

the protection of human health, this permit establishes effluent limitations for enterococcus.

On November 15, 2014, the State amended HAR Section 11-54-8(b) to adopt new recreational WQS. The amended standards were approved by EPA on May 20, 2015. As amended, HAR Section 11-54-8(b) establishes recreational criteria for all State waters designed to protect the public from exposure to harmful levels of pathogens while participating in water-contact activities. The specified recreational criteria for all State waters are: a geometric mean of 35 CFU/100 mL over any 30-day interval and a Statistical Threshold Value (STV) of 130 CFU/100 mL, which may not be exceeded in more than ten percent (10%) of samples taken within the same 30-day interval in which the geometric mean is calculated.

The previous permit and draft permit established a monthly average effluent limitation of 17,115 CFU/100 mL based on the enterococcus geometric mean of 35 CFU/100 mL and an average initial dilution of 489:1. Also, the previous permit and draft permit established a daily maximum effluent limitation, not to be exceeded in more than ten percent (10%) of samples taken within the same 30-day interval in which the geometric mean was calculated, of 26,910 CFU/100 mL based on the STV of 130 mL and a minimum initial dilution of 207:1.

Illness from exposure to pathogens may occur at concentrations within the mixing zone, thus for the protection of human health due to the potential for acute illness from pathogens, the minimum initial dilution of 207:1 was used to calculate applicable daily maximum WQBELs for enterococcus, and the average initial dilution of 489:1 was used to calculate the applicable monthly average effluent limitation in the previous permit.

Based on effluent data from April 2014 through December 2018, the MEC for enterococcus was 2,300,000 CFU/100 mL and the highest monthly geometric mean was 552,797 CFU/100 mL. It does not appear the Permittee can immediately comply with the effluent limitations for enterococcus. Consistent with HAR Section 11-55-21, this permit retains the compliance schedule from the previous permit for the Permittee to comply with final effluent limitations for enterococcus by June 30, 2030.

The schedule of compliance is being retained for a parameter that was limited at the proposed level in the previous permit and the existing discharge is not expected to comply with the proposed limitations. Final compliance will ultimately require the implementation of an unidentified treatment technology, with unknown implementation and operations costs. Necessary facility upgrades are expected to include costly and time extensive upgrades. Sufficient time to select the preliminary preferred alternative, conduct pilot testing, engineering design, permitting, construction, and optimization and

testing is not available prior to the effective date of this permit. Thus, a compliance schedule is necessary.

The Permittee is currently subject to the 2010 Consent Decree, which requires the Permittee to upgrade the facility to meet secondary treatment standards for BOD_5 and TSS by June 1, 2024. To minimize cost, increase the efficiency in both the planning and construction of the necessary facility upgrades, and increase treatment efficiency, the planning and construction of the facility upgrades necessary to comply with the final enterococcus limitations should be performed in concert with the 2010 Consent Decree required upgrades. Requiring facility upgrades independent of the 2010 Consent Decree upgrades may result in an unwarranted economic burden to the Permittee, require additional modifications to the selected treatment technology, reduce the treatment efficiency, and/or increase the operational costs of the selected technology. Thus, compliance dates and activities have been selected that are consistent with those established in the 2010 Consent Decree and represent the minimum reasonable time frame to comply with the final effluent limitations. As such, the compliance schedule requires compliance as soon as possible, consistent with the requirements of 40 CFR 122.47(a)(1). The DOH believes that the schedule and milestones as described in the proposed permit will achieve compliance with the final effluent limits as soon as possible.

HAR Section 11-55-21(b) states, “When a schedule specifies compliance longer than one year after permit issuance, the schedule of compliance shall specify interim requirements and the dates for their achievement and in no event shall more than one year elapse between interim dates. If the time necessary for completion of interim requirement (such as the construction of a treatment facility) exceeds one year and is not readily divided into stages for completion, the schedule shall specify interim dates for the submission of reports of progress towards completion of the interim requirements.”

During the compliance schedule, the Permittee is required to maintain current treatment capability. Interim effluent limitations for enterococcus have been retained from the previous permit until the final effluent limitations become effective. Interim effluent limitations from the previous permit were developed based on 1,856 observed effluent data points collected from July 2007 through July 2012. The use of the observed MEC (5,500,000 CFU/100 mL) for the basis of an interim daily maximum limitation was not reasonable, as the MEC was over 21.3 standard deviations over the mean, and the next highest effluent result (1,700,000 CFU/100 mL) was less than 31 percent of the MEC. Consistent with guidance provided in EPA’s TSD, interim daily maximum and monthly geometric mean effluent limitations were calculated based on the 99^{th} and 95^{th} percentile of an assumed lognormal distribution.

Thus, a single sample maximum interim effluent limitation for enterococcus of 1,155,089 CFU/100 mL, and a monthly geometric mean effluent limitation of 898,087 CFU/100 mL have been retained in this permit.

As previously discussed, since effluent data indicate that the Permittee cannot immediately comply with the effluent limitations for enterococcus, and anticipated upgrades necessary to comply with the final effluent limitations may not be implemented prior to the effective date of the permit, a compliance schedule that represents the minimum time period for compliance has been established, and interim effluent limitations have been established that require the Permittee to maintain current treatment capabilities. The schedule of compliance is in accordance with HAR Section 11-55-21(b) and 40 CFR 122.47.

Anti-backsliding regulations are satisfied because the established effluent limitations are at least as stringent as the previous permit for enterococcus.

g. Whole Effluent Toxicity (WET). WET limitations protect receiving water quality from the aggregated toxic effect of a mixture of pollutants in an effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent or receiving water. The WET approach allows for protection of the narrative criterion specified in HAR Section 11-54-4(c)(2) while implementing Hawaii's numeric WQS for toxicity. There are two types of WET tests – acute and chronic. An acute toxicity test is conducted over a short period of time and measures mortality. A chronic toxicity test is generally conducted over a longer period of time and may measure mortality, reproduction, or growth.

The previous permit established a chronic WET effluent limitation at Outfall Serial No. 001 for *Tripneustes gratilla* (*T. gratilla*), *Ceriodaphnia dubia* (*C. dubia*), and *Atherinops affinis* (*A. affinis*).

In order to improve WET analysis, the DOH implemented EPA's Test of Significant Toxicity Approach (TST) for WET effluent limitations within the State in the previous permit. As such, the chronic WET effluent limitation at Outfall Serial No. 001 has been retained to be consistent with the TST approach using *T. gratilla*, a native species to Hawaii, *C. dubia,* and *A. affinis*. Whole effluent toxicity data for the time period between April 2014 and December 2018 using the test species *T. gratilla, C. dubia,* and *A. affinis* resulted in seven exceedances of the chronic toxicity effluent limitation.

Test procedures for measuring toxicity to marine organisms of the Pacific Ocean, including *T. gratilla*, are not provided at 40 CFR 136. Consistent with the Preamble to EPA's 2002 Final WET Rule, permit writers may include (under 40 CFR 122.41(j)(4) and 122.44(i)(iv)) requirements for the use of test procedures that are not approved at 40 CFR 136 on a permit-by-permit basis. The use of

alternative methods for west coast facilities in Hawaii is further supported under 40 CFR 122.21(j)(5)(viii), which states, “West coast facilities in…, Hawaii,… are exempted from 40 CFR [P]art 136 chronic methods and must use alternative guidance as directed by the permitting authority.”

EPA has issued applicable guidance for conducting chronic toxicity tests using *T. gratilla* in *Hawaiian Collector Urchin, Tripneustes gratilla (Hawa’e) Fertilization Test Method* (Adapted by Amy Wagner, EPA Region 9 Laboratory, Richmond, CA from a method developed by George Morrison, EPA, ORD Narragansett, RI and Diane Nacci, Science Applications International Corporation, ORD Narragansett, RI) (EPA/600/R-12/022).

As previously discussed, reasonable potential for WET has been determined for Outfall Serial No. 001 and an effluent limitation must be established in accordance with 40 CFR 122.44(d)(1). Further, a WET effluent limitation and monitoring are necessary to ensure compliance with applicable WQS in HAR Section 11-54-4(c)(2).

The WET limitation and monitoring requirements were incorporated into the draft permit in accordance with the EPA *National Policy on Water Quality-Based Permit Limitations for Toxic Pollutants* issued on March 9, 1984 (49 FR 9016), HAR Section 11-54-4(b)(2)(B), and EPA’s *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010).

Consistent with HAR Section 11-54-4(b)(2)(B), the draft permit retains the chronic toxicity effluent limitation based on the TST hypothesis testing approach. The TST approach was designed to statistically compare a test species response to the in-stream waste concentration (IWC) and a control.

For continuous discharges through submerged outfalls, HAR Section 11-54-4(b)(4)(A) requires the no observed effect concentration (NOEC), expressed as a percent of effluent concentration, to not be less than 100 divided by the minimum dilution.

The following equation is used to calculate the IWC where dilution is granted (Outfall Serial No. 001):

IWC = 100/critical dilution factor

= 100/207

= 0.48%

For any one chronic toxicity test, the chronic WET permit limit that must be met is rejection of the null hypothesis (Ho):

IWC (percent effluent) mean response ≤ 0.75 × Control mean response.

A test result that rejects this null hypothesis is reported as “Pass”. A test result that does not reject this null hypothesis is reported as “Fail”

The acute and chronic biological effect levels (effect levels of 20% and 25%, respectively, or b values of 0.80 and 0.75, respectively) incorporated into the TST define EPA’s unacceptable risks to aquatic organisms and substantially decrease the uncertainties associated with the results obtained from EPA’s traditionally used statistical endpoints for WET. Furthermore, the TST reduces the need for multiple test concentrations which, in turn, reduces laboratory costs for Permittees while improving data interpretation. A significant improvement offered by the TST approach over traditional hypothesis testing is the inclusion of an acceptable false negative rate. While calculating a range of percent minimum significant differences (PMSDs) provides an indirect measure of power for the traditional hypothesis testing approach, setting appropriate levels for β and α using the TST approach establishes explicit test power and provides motivation to decrease within test variability which significantly reduces the risk of under reporting toxic events (USEPA 2010[1]).

Taken together, these refinements simplify toxicity analyses, provide Permittees with the positive incentive to generate high quality data, and afford effective protection to aquatic life.

A WET effluent limitation based on the TST hypothesis testing approach is protective of the WQS for toxicity contained in HAR Section 11-54-4(b)(4)(B) and is not considered to be less stringent. Use of the TST approach is consistent with the requirements of State and federal anti-backsliding regulations.

Under the draft permit, the Permittee shall conduct chronic toxicity testing on the three required species (*T. gratilla*, *C. dubia*, and *A. affinis*) in accordance with appropriate test methods, rotating the test species month by month such that each test species is tested once every quarter.

h. Summary of Final Effluent Limitations

In addition to the effluent limitations specified above, HAR Section 11-55-20 requires that daily quantitative limitations by weight be established where possible. Thus, in addition to concentration based-effluent limitations,

1 U.S. Environmental Protection Agency. 2002a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (5th Edition). EPA 821-R-02-012. Washington, DC: Office of Water.

mass-based effluent limitations (in pounds per day) have been established where applicable based on the following formula:

lbs/day = 8.34 * concentration (mg/L) * flow (MGD)

40 CFR 122.45(b)(1) requires that mass-based effluent limitations for POTWs be based on design flow. The previous permit established mass-based effluent limitations based on the facility design flow of 38 MGD. For BOD_5 and TSS, the draft permit retains the mass-based effluent limitations from the previous permit.

The following table lists final effluent limitations contained in the draft permit and compares them to effluent limitations contained in the previous permit.

Table F-8. Summary of Final Effluent Limitations – BOD_5 and TSS

Parameter	Units	Effluent Limitations Contained in the Previous Permit			Proposed Effluent Limitations[1]		
		Average Annual	Average Monthly	Maximum Daily	Average Annual	Average Monthly	Maximum Daily
Flow	MGD	[1]	[1]	[1]	[1]	[1]	[1]
Biochemical Oxygen Demand (5-day @ 20 Deg. C) (BOD_5)	mg/L	30	45	[1]	30	45	[1]
	lbs/day[1]	9,508	14,261	[1]	9,508	14,261	[1]
	% Removal	The average monthly percent removal shall not be less than 85 percent			The average monthly percent removal shall not be less than 85 percent.		
Total Suspended Solids (TSS)	mg/L	30	45	[1]	30	45	[1]
	lbs/day[1]	9,508	14,261	[1]	9,508	14,261	[1]
	% Removal	The average monthly percent removal shall not be less than 85 percent			The average monthly percent removal shall not be less than 85 percent.		

[1] The Permittee shall monitor and report the test results.
[2] Based on a design flow of 38 MGD.

Table F-9. Summary of Final Effluent Limitations – All Other Pollutants

Parameter	Units	Effluent Limitations Contained in the Previous Permit			Proposed Effluent Limitations		
		Average Annual	Average Monthly	Maximum Daily	Average Annual	Average Monthly	Maximum Daily
pH	standard units	Not less than 6.0 and not greater than 9.0			Not less than 6.0 and not greater than 9.0		
Chronic Toxicity *Tripneustes gratilla*[1]	Pass/Fail	--	--	Pass[2]	--	--	Pass[2]
Chronic Toxicity *Ceriodaphnia dubia*[1]	Pass/Fail	--	--	Pass[2]	--	--	Pass[2]
Chronic Toxicity *Atherinops affinis*[1]	Pass/Fail	--	--	Pass[2]	--	--	Pass[2]
Enterococci	CFU/100 mL	--	17,115[3]	26,910[4]	--	17,115[3]	26,910[4]
Temperature	°C	[5]	[5]	--	[5]	[5]	--
Total Oil and Grease	mg/L	[5]	[5]	--	[5]	[5]	--
Total Petroleum Hydrocarbons	mg/L	[5]	[5]	--	[5]	[5]	--

Parameter	Units	Effluent Limitations Contained in the Previous Permit			Proposed Effluent Limitations		
		Average Annual	Average Monthly	Maximum Daily	Average Annual	Average Monthly	Maximum Daily
Fats, Oils, and Grease[8]	mg/L	[5]	[5]	--	[5]	[5]	--
Turbidity	NTU	[5]	[5]	--	[5]	[5]	--
Remaining Pollutants[9]	µg/L	[5]	[5]	--	[5]	[5]	--

[1] The Permittee shall test one species of the three (3) chronic test species (*T. gratilla*, *C. dubia*, and *A. affinis*) each calendar month such that each species is tested at least once per quarter.
[2] "Pass", as described in section D.2.g of this Fact Sheet.
[3] Effluent limitation expressed as a monthly geometric mean.
[4] Effluent limitation expressed as maximum daily geometric mean.
[5] The Permittee shall monitor and report the parameter analytical test results.
[6] Expressed as an annual geometric mean.
[7] Expressed as a single sample maximum.
[8] Fats, oils, and grease is equal to the total oil and grease minus total petroleum hydrocarbons.
[9] The Permittee shall perform semi-annual monitoring on all remaining pollutants listed in Appendix 1 of the draft permit, except those already specified in the table above. Effluent analyses for metals shall be reported as total recoverable.

i. Satisfaction of Anti-Backsliding Requirement

The CWA specifies that a renewed permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA Sections 402(o) or 303(d)(4), or, where applicable, 40 CFR 122.44(l).

The effluent limitations established in the draft permit are consistent with State and federal anti-backsliding regulations because they are at least as stringent as those in the previous permit and are consistent with State and federal anti-backsliding regulations.

j. Satisfaction of Antidegradation Requirements

The DOH established the State antidegradation policy in HAR Section 11-54-1.1, which incorporates the federal antidegradation policy at 40 CFR 131.12. The State antidegradation policy requires, among other factors, that the existing quality of Tier 2 waters be maintained and protected unless the degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

The permitted discharge is consistent with antidegradation provisions of 40 CFR 131.12 and HAR Section 11-54-1.1. since the effluent limitations established in the draft permit are at least as stringent as the previous permit.

E. Rationale for Receiving Water and Zone of Mixing Requirements

1. Summary of ZOM Water Quality Standards

The following are applicable ZOM water quality criteria from HAR Section 11-54-6(b)(3).

Table F-10. ZOM Water Quality Criteria

Parameter	Units	Applicable Water Quality Standard
Total Nitrogen	µg/L	150.00[1]
Ammonia Nitrogen	µg/L	3.50[1]
Nitrate + Nitrite Nitrogen	µg/L	5.00[1]
Total Phosphorus	µg/L	20.00[1]
Light Extinction Coefficient	k units	0.20[1]
Chlorophyll a	µg/L	0.30[1]
Turbidity	NTU	0.50[1]
pH	standard units	[2]
Dissolved Oxygen	mg/L	[3]
Temperature	°C	[4]
Salinity	ppt	[5]

NR – Not Reported

[1] Water quality standards expressed as a geometric mean.

[2] pH shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain, or groundwater discharge may depress the pH to a minimum level of 7.0.

[3] Dissolved oxygen shall not be less than 75 percent saturation.

[4] Temperature shall not vary more than 1° Celsius from ambient conditions.

[5] Salinity shall not vary more than 10 percent from natural or seasonal changes considering hydrologic input and oceanographic factors.

2. Existing Receiving Water Limitations and Monitoring Data

a. Shoreline Stations

The following is a summary of the geometric mean values calculated from each shoreline monitoring location, reported in the monthly DMRs from April 2014 to December 2018.

Table F-11. Shoreline Monitoring Stations

Station	Geometric Mean[1]
	Enterococcus
	CFU/100 mL
S1	1.46
S2	2.70
S3	1.43
S4	1.59

Station	Geometric Mean[1]
	Enterococcus
	CFU/100 mL
Applicable Water Quality Standard	35

[1] Source: Monthly DMR's submitted by the Permittee from April 2014 through December 2018. Reported geometric mean is the maximum annual geometric mean reported at each monitoring station.

b. Offshore Stations. The following is a summary of the geometric mean values calculated from each offshore monitoring location on the edge of the ZOM, or reference station, reported in the monthly and quarterly DMRs from January 2014 through December 2018.

Table F-12. Offshore Monitoring Stations

Station	Highest Annual Geometric Mean[1]						
	Enterococcus[2]	Nitrate + Nitrite Nitrogen[2]	Ammonia Nitrogen[2]	Total Nitrogen[2]	Total Phosphorus[2]	Turbidity[2]	Chlorophyll a[2]
	CFU/100 mL	µg/L	µg/L	µg/L	µg/L	NTU	µg/L
HB1	3.4	2.3	2.8	129	8.5	0.30	0.17
HB2	NR	NR	NR	NR	NR	0.31	NR
HB3	NR	NR	NR	NR	NR	0.32	NR
HB4	NR	NR	NR	NR	NR	0.33	NR
HB5	NR	NR	NR	NR	NR	0.29	NR
HB6	10.4	1.6	3.0	114	9.1	0.36	0.23
HB7	3.0	1.4	2.0	114	8.2	0.31	0.13
HM1	32.3	2.5	3.5	135	8.7	0.37	0.19
HM2	21.2	2.0	4.0	119	8.9	0.37	0.22
HM3	10.7	3.3	2.5	119	8.6	0.33	0.21
HM4	9.6	1.9	3.1	119	9.5	0.32	0.21
HZ	NR	NR	NR	NR	NR	0.34	NR
Applicable Water Quality Standard	35	5.0	3.5	150	20	0.50	0.30

NR - Not Reported

[1] Source: Quarterly DMRs submitted by the Permittee from January 2014 through December 2018.

[2] Reported geometric mean is the maximum annual geometric mean from the top, middle, and bottom sampling points at each station.

3. Proposed Receiving Water Limitations

a. The draft permit incorporates receiving water monitoring for future RPA and receiving water assessment. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by DOH, as required by the Water Quality Act of 1987 (P.L. 100-4) and regulations adopted thereunder. The DOH adopted water quality standards specific for open coastal waters in HAR Chapter 11-54.

b. The discharge from the facility shall not interfere with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife and allows recreational activities in and on the water. The draft permit incorporates receiving water monitoring for the protection of the beneficial uses of the Pacific Ocean.

c. The Permittee is required to comply with the HAR Chapter 11-54, Basic Water Quality Criteria of which has been incorporated as part of the draft permit under Section 1 of the DOH Standard NPDES Permit Conditions (Version 15).

4. Zone of Initial Dilution (ZID) and Zone of Mixing (ZOM). Federal regulations at 40 CFR 125.62(a) require that at the time a 301(h) modification becomes effective, the Permittee's outfall and diffuser must be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the ZID, all applicable State water quality standards and, for pollutants for which there are no EPA-approved standards. EPA's Amended Section 301(h) Technical Support Document (1994) describes the ZID as the area around the diffuser circumscribed by the distance "d" from any point of the diffuser, where "d" is equal to the water depth. The ZID dimensions for the facility as defined in EPA's TDD are 407 feet wide and 2,165 feet along the centerline of the diffuser.

HAR Chapter 11-54 allows for a ZOM, which is a limited area around outfalls to allow for initial dilution of waste discharges, if the ZOM is in compliance with requirements in HAR Section 11-54-9(c). For the permit renewal, the Permittee requested that the existing ZOM for the assimilation of treated wastewater from the Mamala Bay be retained. Consistent with the previous permit, the ZOM requested is 2,000 feet wide and 3,700 feet along the centerline of the diffuser and extends vertically downward to the ocean floor. Figure 2 in the draft permit shows the ZOM and ZID.

a. Prior to the renewal of a ZOM, the environmental impacts, protected uses of the receiving water, existing natural conditions, character of the effluent, and adequacy of the design of the outfall must be considered. The following findings were considered:

(1) The Permittee's ZOM application indicates that no major physical effects are expected due to the continuation of the ZOM.

The Permittee has submitted annual fish monitoring reports for five consecutive years during the permit term. Data from 2014 through 2017, summarized in the Permittee's Fish Monitoring Reports, shows fish abundance and distribution fluctuate in the outfall vicinity through different

years but does not show any long-term trends between fish catches and the discharge from the outfall.

Additionally, a comparison of data from nineteen annual reports summarized in the Permittee's 2010 *Community Structure of Fish and Macrobenthos at Selected Shallow-Water Sites Adjacent to the Barbers Point Ocean Outfall, O'ahu, Hawai'i*, showed that no statistically significant change had occurred in the measured biological parameters at the four stations within 2.2 km of the outfall that would suggest any impact from the operation of the outfall diffuser.

The Permittee sampled seven stations in January and February 2010 for benthic fauna at Monitoring Stations HZ, HB2, HB3, HB4, HB6, and HB7 and summarized the results in *Benthic Faunal Sampling Adjacent to the Barbers Point Ocean Outfall, O'ahu, Hawai'i, January-February 2010*. In this report, the Permittee concluded that there is no indication of any marked alteration of the benthic community composition related to station proximity to the outfall diffuser. The analyses of all faunal groups clearly demonstrate the presence of a diverse and abundant macrobenthos within and near the ZID of the Barbers Point ocean outfall.

Based on the limited data and studies, there is no current evidence that the outfall or the existing ZOM is adversely impacting fish health or community structure.

(2) The diffuser for Outfall Serial No. 001 reportedly provides a minimum of 207:1 dilution and discharges 8,760 feet offshore. No information provided in the ZOM application indicates that dilution would be negatively impacted by current conditions.

(3) Effluent data and receiving water data are provided in Tables F-7, F-11, and F-12 of this Fact Sheet. Biological monitoring of the facility's diffuser found that no evidence of negative impacts to fish populations due to the diffuser was identified.

b. HAR Section 11-54-9(c)(5) prohibits the establishment of a ZOM unless the application and supporting information clearly show: that the continuation of the ZOM is in the public interest; the discharge does not substantially endanger human health or safety; compliance with the WQS would produce serious hardships without equal or greater benefits to the public; and the discharge does not violate the basic standards applicable to all waters, will not unreasonably interfere with actual or probable use of water areas for which it is classified, and has received the best degree of treatment or control. The following findings were made in consideration of HAR Section 11-54-9(c)(5):

(1) The facility treats domestic wastewater from Halawa, Mililani, and Ko'Olina, serving approximately 335,000 people and is a necessity for public health. There are no other treatment facilities currently servicing this area and a cessation of function or operation would cause severe hardship to the residents.

(2) No known information indicates that the discharge is causing or contributing to conditions that substantially endanger human health or safety. The Permittee reports there have been no reported cases of illness which health officials attributed to the treated effluent and that enterococcus bacteria data does not indicate a shoreward movement of the ocean outfall discharge.

(3) The feasibility and costs to install treatment necessary to meet applicable WQS end-of-pipe, or additional supporting information, were not provided by the Permittee to demonstrate potential hardships. However, based on effluent data, significant facility enhancements and capital costs would likely be necessary to comply with applicable WQS for which the ZOM was applied. As discussed in Part E.3.c.(2)(a), the operation of the facility has been found to benefit the public. No information is known that would revise the finding during the previous permit term that compliance with the applicable WQS without a ZOM would produce serious hardships without equal or greater benefits to the public.

(4) As discussed in Part D.2.c.(5)(c) of this Fact Sheet, effluent data indicates the presence of pollutants in excess of applicable WQS. However, this permit establishes WQBELs based on WQS. The draft permit requires compliance with the effluent limitations and conditions which are protective of the actual and probable uses of the receiving water and implement applicable technology-based effluent limitations.

The Department has determined that the ZOM satisfies the requirements in HAR Section 11-54-09(c)(5). The establishment of the ZID and ZOM is subject to the conditions specified in Part D of the draft permit. The draft permit incorporates receiving water monitoring requirements which the DOH has determined are necessary to evaluate compliance of the Outfall Serial No. 001 discharges with the applicable water quality criteria, as described further in Section F.4 of this Fact Sheet.

F. Rationale for Monitoring and Reporting Requirements

40 CFR 122.41(j) specify monitoring requirements applicable to all NPDES permits. HAR Section 11-55-28 establishes monitoring requirements applicable to NPDES permits within the State of Hawaii. 40 CFR 122.48 and HAR Section 11-55-28 require that all NPDES permits specify requirements for recording and reporting monitoring results. The principal purposes of a monitoring program are to:

- Document compliance with waste discharge requirements and prohibitions established by the DOH;

- Facilitate self-policing by the Permittee in the prevention and abatement of pollution arising from waste discharge;

- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards; and

- Prepare water and wastewater quality inventories.

The draft permit establishes monitoring and reporting requirements to implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the draft permit.

1. Influent Monitoring

Influent monitoring is required to determine the effectiveness of pretreatment and non-industrial source control programs, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. All influent monitoring requirements have been retained from the previous permit. The proposed influent water monitoring requirements are specified in Part A.1 of the draft permit.

2. Effluent Monitoring – Outfall Serial No. 001

The following monitoring requirements are applicable at Outfall Serial No. 001.

a. Monitoring requirements for ammonia nitrogen, total nitrogen, nitrate+nitrite nitrogen and phosphorous have been removed from the draft permit due to results of the RPA that found no reasonable potential to exceed the WQS.

b. Monitoring requirements for turbidity have been retained from the previous permit to enable comparison with the receiving water ZID monitoring results to determine if the facility effluent is contributing to elevated concentrations of turbidity pollutants.

c. Monitoring requirements for flow have been retained from the previous permit to calculate pollutant loading and to determine compliance with mass-based effluent limitations.

d. Monitoring requirements for temperature have been retained from the previous permit to determine compliance with WQS.

e. Monitoring requirements for pH, BOD_5, TSS, and enterococcus have been retained from the previous permit in order to determine compliance with effluent limitations and to collect data for future RPAs.

f. Monitoring requirements for total oil and grease, total petroleum hydrocarbons, and fats, oils, and grease have been retained from the previous permit to ensure that the facility is meeting the basic water quality criteria contained in HAR Section 11-54-4(a), which states all waters shall be free of "[f]loating debris, oil, grease, scum, or other floating materials," and in the DOH's Standard NPDES Permit Conditions (version 15), which is included as an attachment to the draft permit.

g. Monitoring requirements for all other pollutants listed in Appendix 1 of the draft permit are retained from the previous permit in order to collect data for future RPAs.

3. **Whole Effluent Toxicity Monitoring.** Consistent with the previous permit, monthly whole effluent toxicity testing is required for chronic toxicity in order to determine compliance with chronic toxicity effluent limitations as specified in Parts A.1 and B of the draft permit. Three species have been included for chronic toxicity monitoring, and the Permittee shall conduct chronic toxicity testing by rotating the test species month by month such that each test species is tested once every quarter.

4. **Receiving Water Quality Monitoring Requirements.**

   a. Shoreline Water Quality Monitoring. Shoreline water quality monitoring for enterococci is used to determine compliance with water quality criteria specific for marine recreational waters within 300 meters (1,000 feet) of shoreline. The Permittee shall monitor at four stations with a frequency of five (5) days per month in order to calculate a geometric mean. In addition, the Permittee shall include visual observations of the shoreline monitoring stations five (5) days per month. These monitoring requirements are retained from the previous permit and included in Part E.1 of the draft permit. Compliance with the enterococci criteria for marine recreational waters will be effective upon completion of the required tasks in the compliance schedule in Part A.6.b. of the draft permit

   b. Offshore Water Quality Monitoring. The draft permit requires the Permittee to monitor offshore waters at six stations in and along the ZID, two stations outside the ZID, and four stations on the ZOM.

   c. Offshore Sediment Monitoring. Offshore sediment monitoring is required to detect spatial and temporal trends in sediment pollutants and benthic

organisms. The draft permit requires the Permittee to monitor offshore sediments for chemistry and benthic organisms at the following stations:

Table F-14. Offshore Sediment Monitoring

Location	Station Name	Number of Samples at each Station (Including replicates)	
		Chemistry	Benthic Organisms
Offshore	HZ	3	3
	HB1[1]	3	3
	HB2	3	3
	HB3	3	3
	HB4	3	3
	HB6	3	3
	HB7[1]	3	3

[1] Control station

d. Fish Monitoring. Fish monitoring is required at three locations, at the outfall and at two (2) fish monitoring stations (FR1-B and FR2-B) within the ZID, to determine if fish are being negatively affected by effluent discharged at Outfall Serial No. 001 compared to the control stations. Fish tissue monitoring requirements have been retained from the previous permit.

e. Coral Reef Survey. An assessment of coral communities in the Barbers Point area, and the impact of the Honouliuli wastewater discharge, has been retained from the previous permit. The assessment has been retained to identify any potential impacts on the coral communities due to the discharge of primary treated effluent from the facility.

G. Rationale for Provisions.

1. Standard Provisions. The Permittee is required to comply with DOH Standard NPDES Permit Conditions, which are included as part of the draft permit.

2. Monitoring and Reporting Requirements. The Permittee shall comply with all monitoring and reporting requirements included in the draft permit and in the DOH Standard NPDES Permit Conditions.

3. Special Provisions.

a. Reopener Provisions. The draft permit may be modified in accordance with the requirements set forth at 40 CFR 122 and 124, to include appropriate conditions or limitations based on newly available information, or to implement any new state water quality criteria that are approved by the EPA.

b. Special Studies and Additional Monitoring Requirements. Toxicity Reduction Requirement. The draft permit requires the Permittee to submit an Initial Investigation Toxicity Reduction Evaluation (TRE) workplan to the

DOH and EPA which shall describe steps which the Permittee intends to follow in the event that toxicity is detected. This requirement is retained from the previous permit and is discussed in detail in Part B.5 of the draft permit.

4. Special Provisions for Municipal Facilities.

a. Pretreatment Requirements. The federal CWA Section 307(b), and federal regulations, 40 CFR 403, require POTWs to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants which will interfere with treatment plant operations or sludge disposal and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to CWA Sections 307(b), (c), (d), and 402(b), 40 CFR 125, 40 CFR 403, and in HAR Section 11-55-24.

The draft permit includes a pretreatment program in accordance with federal regulations and State pretreatment regulations. The pretreatment requirements are based on the previous permit and are consistent with NPDES permits issued to other Hawaii POTWs. The draft permit also continues to require the Permittee to implement and update its BMP-based program for controlling animal and vegetable oil and grease. The draft permit requires the Permittee to comply with urban area pretreatment requirements since the facility continues to operate as a primary treatment plant.

Large applicants for a draft NPDES permit under CWA Section 301(h) with a service population greater than 50,000 that receives one or more toxic pollutants from an industrial source are required to comply with urban area pretreatment requirements at 40 CFR 125.65. The Permittee has indicated that it will comply with the urban area pretreatment requirements by demonstrating that it has applicable pretreatment requirements in effect. This demonstration involves the Permittee performing a local limitations analysis and developing any needed local limitations. Although the Permittee was denied reissuance of the 301(h) variances, the facility will continue to discharge primary treated wastewater until facility upgrades are complete. Therefore, a schedule for local limitations analysis and conditions regarding significant industrial user compliance and an annual local limitations reevaluation is retained in the draft permit.

b. Biosolids Requirements. The use and disposal of biosolids is regulated under federal laws and regulations, including permitting requirements and technical standards included in 40 CFR 503, 257, and 258. The biosolids requirements in the draft permit are in accordance with 40 CFR 257, 258, and 503, are based on the previous permit and are consistent with NPDES permits issued to other Hawaii POTWs.

5. Other Special Provisions.

a. Water Pollution Prevention Program. The draft permit requires the Permittee to submit a wastewater pollution prevention program by March 31 each year. This provision is retained from the previous permit and is required to allow DOH to ensure that the Permittee is operating the facility correctly and attaining maximum treatment of pollutants discharged by considering all aspects of the wastewater treatment system. This provision in included in Part F of the draft permit.

b. Wastewater treatment facilities subject to the draft permit shall be supervised and operated by persons possessing certificates of appropriate grade, as determined by the DOH. If such personnel are not available to staff the wastewater treatment facilities, a program to promote such certification shall be developed and enacted by the Permittee. This provision is included in the draft permit to assure that the facility is being operated correctly by personnel trained in proper operation and maintenance. This provision is retained from the previous permit and included in Part J.1 of the draft permit.

c. The Permittee shall maintain in good working order a sufficient alternate power source for operating the wastewater treatment and disposal facilities. This provision is retained from the previous permit in order to ensure that if a power failure occurs, the facility is well equipped to maintain treatment operations until power resumes. If an alternate power source is not in existence, the draft permit requires the Permittee to halt, reduce, or otherwise control all discharges upon the reduction, loss, or failure of the primary source of power. This provision is included in Part J.2 of the draft permit.

H. Public Participation

A Notice of Proposed Water Pollution Control Permit was published in the ***Honolulu Star-Advertiser*** on July 9, 2020, soliciting public comment on the proposed action for a 30-day period. The permit application, applicable documents, draft permit and fact sheet were available for public review at the CWB office and from the CWB Public Notice website and WPC Viewer. Persons wishing to comment upon or object to the proposed NPDES permit in accordance with HAR Sections 11-55-09(b) and 11-55-09(d), had the opportunity to submit their comments in writing by e-mail at: cleanwaterbranch@doh.hawaii.gov, or either in person or by mail, to:

Clean Water Branch
Environmental Management Division
2827 Waimano Home Road, Room 225
Pearl City, HI 96782

No comments were received during the comment period.

Appendix 1. A summary of the 2010 Consent Decree interim effluent limitations

Honouliuli Wastewater Treatment Plant

2010 Consent Decree Interim Limits

Interim Discharge Limitations					Monitoring Requirements	
Discharge Parameter	Average Monthly	Average Weekly	Maximum Daily	Units	Minimum Frequency	Sample Type
Flow	report	report	report	MGD	continuous	recorder or totalizer
Biochemical Oxygen Demand (5-day)	161 53679	166 55424	report	mg/l lbs/day	daily	24-hour composite
	As a monthly average, not less than 30% removal efficiency from influent stream.					
Total Suspended Solids	50 16721	53 17580	report	mg/l lbs/day	daily	24-hour composite
	As a monthly average, not less than 60% removal efficiency from influent stream.					

Attachment 1 – Permittee's Response to April 19, 2017 Compliance Evaluation Inspection (06APR18 Response to HNWWTPCEI Report.PDF.PDF)

CCH ENV Comments on Honouliuli WWTP NPDES CEI Report

Item No.	Page No.	Section & Paragraph	CEI Report	Comments
1	5	Facility Description	The Facility representatives explained that the Facility conducts a thermal hydrolysis process on sludge prior to introducing the sludge into the digesters and that, eventually, the Facility will move to sludge gasification process to further reduce solids content.	The City is considering thermal hydrolysis and evaluating the possibility of using gasification. Sludge is currently thickened prior to anaerobic digestion.
2	5	Facility Description	Methane gas generated from the sludge processing operation is intercepted, scrubbed, pressurized, and sold.	The City has entered into a contract to sell digester gas to a third party; the design is in progress. The gas is currently flared.
3	9	Inspection Findings – Operation and Maintenance a. Grit Screening/ Headworks	Bar Screen No. 2 was out of service at the time of the inspection (refer to Photograph 2). Mr. Yamada stated that the operators were having problems with the automatic scraping mechanism, but that the unit can still be operated manually. Because the Facility only needs to run two bar screens at a time, the Facility was operating Bar Screen Nos. 1 and 3 until the automatic scraping mechanism of Bar Screen No. 2 could be repaired.	Bar Screen No. 2 was returned to service on December 28, 2017.
4	9	Inspection Findings – Operation and Maintenance a. Grit Screening/ Headworks	Two of the four grit removal/preaeration tanks were out of service at the time of the inspection. Mr. Hansen explained that there were two problems with the tanks. The first problem was that Facility operators had broken the grit elevator horizontal conveyer chains on both tanks due to improper operation. The Permittee conducted an emergency procurement for new parts to repair the horizontal conveyer chains. The grit elevator chain for tank No. 1 had been repaired and repairs to the chain of tank No. 2 was still ongoing (refer to Photographs 6 and 7). Additionally, the Central Shop staff provided additional training to Facility operators about the proper operation of the grit elevators.	Mr. Hanson explained during the inspection that there were two separate problems: two tank grit elevator bucket/chains and one horizontal grit conveyor. Errors in using an incorrect start-up procedure in placing No. 1 back into service caused the grit bucket/chain to break prematurely. Also, No. 2 tank grit elevator bucket/chain broke due to being in continuous operation while repair work was being performed on No. 1 tank. Repair work for grit elevator bucket/chains was complete on No. 1 tank and it returned to service on April 21, 2017, and repair work on No. 2 tank was completed and it returned to service December 7, 2017. Replacement parts for the grit conveyor were ordered on April 19, 2017, but the awarded vendor defaulted on its obligation to supply the parts per the bid contract. A

				second purchase bid was solicited on October 17, 2017. The parts were received on December 5, 2017, and the grit conveyor returned to service on March 29, 2018.
5	9	Inspection Findings – Operation and Maintenance a. Grit Screening/ Headworks	Second, the tank covers and odor control covers were deteriorating, thus creating safety and odor issues. Mr. Hansen stated that the cover replacement project would be performed by a contractor and that it was going out to bid shortly.	Clarification: The terms "tank covers" and "odor control covers" as used in the inspection report refer to the same item. Procurement requisitions for replacement covers were submitted December, 2017. A vendor was selected and tank covers were ordered from the vendor on February 8, 2018, and shipped on March 8, 2018. The arrival of the first shipment of the replacement material is anticipated by April 13, 2018. City staff and the City's current Mechanical Service / Repair Contractor will install the replacement covers on the tank. The City is currently negotiating the work schedule with the contractor.
6	9	Inspection Findings – Operation and Maintenance b. Primary Clarifiers	i. The launder cover support beams of the primary clarifiers were significantly corroded at the time of the inspection (refer to Photographs 8 and 9). When asked about why the launder covers were left up on the primary clarifiers, Facility representatives originally stated that it was because the opening and closing of the launder covers led to many operator injuries at the Facility. However, Mr. Okamura clarified later that this was incorrect, and that the launder covers were left open because the support beams in many locations were too corroded to support the covers.	The City will be permanently removing the launder covers and the support beams to improve operation and maintenance of the primary clarifiers. Date for start of work on the first clarifier is estimated to be May 1, 2018. The clarifiers must be deactivated and worked on one at a time as the plant requires three of its four clarifiers to be operational at all times to accommodate certain flow conditions. Estimated duration of the project is 45 days for each clarifier.
7	10	Inspection Findings – Operation and Maintenance b. Primary Clarifiers	ii. Floating solids were observed in Primary Clarifier Nos. 2 and 4 at the time of the inspection. Some of the floating solids were observed passing through the clarifiers' weir plates (refer to Photographs 8, 10, 12, and 13).	Weirs will be cleaned on a weekly basis.
8	10	Inspection Findings – Operation and Maintenance b. Primary Clarifiers	iii. The beach plate and scum trough of Primary Clarifier No. 3 was observed to be corroded at the time of the inspection (refer to Photograph 15).	Work for painting and corrosion repair for Primary Clarifier No. 3, which includes the beach plate and scum trough, is estimated to begin May 1, 2018. Estimated duration of the project is 45 days. When Primary Clarifier No. 3 is repaired and returned to service, the other primary clarifiers will be deactivated and similarly worked on one at a time as the plant requires three of its four clarifiers to be operational

				at all times to accommodate certain flow conditions.
9	10	Inspection Findings – Operation and Maintenance c. Biotowers	Biotower Pump No. 1 was out of service at the time of the inspection (refer to Photograph 18). Mr. Hansen stated that the Biotower pump was taken offline in September 2016 because of vibrations and that the Permittee had issues securing new parts for the replacement. The pump was tagged out at the time of the inspection (refer to Photograph 19). A white board located in the MCC room listed that Biotower Pump No. 1 was taken offline on September 19, 2016 (refer to Photograph 20).	Biotower Pump No. 1 was overhauled and reinstalled on July 28, 2017. However, operational problems were noted with excessive vibration and excessive consumption of seal lubricating water to pump bearings. Required replacement parts were obtained and internal inspection and reassembly of the pump was completed on March 19, 2018. The pump was returned to service on March 28, 2018.
10	10	Inspection Findings – Operation and Maintenance d. Secondary Clarifiers	i. At the time of inspection, I observed vegetative growth in the effluent trough of Secondary Clarifier No. 1 (refer to Photographs 22 and 23). When asked about why vegetation was growing in the effluent trough was allowed to get so big, the Acting Superintendent stated that it was because the vegetation was "out of reach."	Access to the vegetation requires a man-lift. Removal was attempted using a man-lift in 2016 but was aborted when staff became concerned that the weirs, launders, and effluent box may become damaged in the attempt. Removal was attempted in 2017, using an extended limb pruning saw, but also failed. The vegetative growth above the water line was removed on March 8, 2018. Roots were traced into the weirs and launder effluent box, which will be removed when the clarifier is drained for maintenance in mid-2018. Operational support equipment to reach the trough is now available for regular maintenance. Operators will monitor the vegetative growth during its regular clarifier monitoring conducted every two hours.
11	10	Inspection Findings – Operation and Maintenance	ii. At the time of inspection, I observed solids buildup on the weirs and sidewalls of Secondary Clarifiers Nos. 1 and 2, which created uneven flow across the weirs (refer to Photographs 24, and 26 through 28). The Facility representatives stated that secondary clarifiers are not cleaned as frequently as needed because solids removed from the secondary clarifiers have been known to clog the sand filters at the tertiary water plant. Facility operators were no longer utilizing the secondary clarifier scrubber brush systems to clean the weir plates (refer to Photograph 26).	Weirs will be cleaned on a weekly basis. Operators were also instructed to coordinate cleaning with the reuse facility to minimize impact on the tertiary water plant.
12	10	Inspection Findings –	i. Gravity Belt Thickener No. 1 had a ripped belt at the time of the inspection (refer to Photographs 36 and 37).	The belt and its hydraulic tracking cylinder were replaced on May 5, 2017.

		Operation and Maintenance e. Solids Handling	Mr. Hansen explained that the unit can be run with the torn belt if needed. He added that the Facility has a replacement belt for the unit and that a work order to replace the belt was generated approximately six months ago but that the work still had not been completed due to lack of available staff.	
13	11	Inspection Findings – Operation and Maintenance e. Solids Handling	ii. Digester No. 1 was offline at the time of the inspection. The Facility representatives stated that the sludge level sensor was recently replaced and that the digester was in the process of coming online and would be operational in the next few weeks.	Per the Honouliuli WWTP Facility-Wide Operations Manual submitted to EPA and DOH on April 30, 2012, the plant is operating with two primary digesters online and one primary digester on standby. Digester No. 1 is on standby. The Facility representatives misstated the timeline for placing Digester No. 1 online. The digester will be put into service by August, 2018. Although the sludge level sensor was recently replaced, other mechanical parts (mixers, valves, etc.) are undergoing inspection and will be replaced, if necessary, prior to placing Digester No. 1 in service.
14	11	Inspection Findings – Operation and Maintenance e. Solids Handling	iii. The Facility was using a temporary flexible hose and strainer configuration to remove scum from the primary clarifier scum collection pit until the newly installed coarse grit strainers could be brought online sometime in the next few weeks (refer to Photographs 39 through 41).	The new scum strainpress was installed prior to the inspection. However, the equipment was not operational because it lacked SCADA programming for automated tasks to shut-down operating equipment in the event of overflow or malfunction. The initial contract award for SCADA programming work was terminated. The SCADA programming work was subsequently awarded to a new contractor in February, 2018. Anticipated start-up of the new process is August, 2018.
15	11	Inspection Findings – Operation and Maintenance f. Primary/ Secondary Wastewater Splitter Box	The Facility representatives stated that the primary/secondary wastewater splitter box contained an eroded concrete substrate which was in need of replacement at the time of the inspection (refer to Photograph 16). They explained that the Permittee was soliciting bid for this replacement work at the time of the inspection.	The contract went out for bid on April 25, 2017, and was executed on June 8, 2017. The designer produced a change to the box design in August, 2017, and contractors submitted shop drawings in November, 2017. Notice to proceed with construction of the replacement was issued on December 29, 2017. Anticipated completion is December 24, 2018.
16	11	Inspection Findings –	The Facility was still using a temporary in-plant return	A new in-plant return flow pump station was designed with

		Operation and Maintenance g. Return Flow Pump Station	flow pump station because the Facility did not have a permanent return flow pump station at the time of the inspection. The Facility representatives stated that the secondary upgrades for the Facility included the construction of a permanent in-plant return flow pump station. At the time of the inspection, the Permittee was soliciting bids for the construction of this permanent in-plant return flow pump station.	higher flow capacity to accommodate higher flows expected from the planned secondary treatment expansion. Notice to proceed with construction of the new return pump station was issued on September 26, 2017. Construction contract duration is 540 days. Anticipated completion is March 19, 2019. The existing in-plant return pump station is being maintained and is sufficient to accommodate typical in-plant return flows, including draining tanks for maintenance.
17	11	Inspection Findings – Operation and Maintenance h. Other Down Equipment	A white board located in the MCC room listed multiple treatment units and related appurtenances that were out of service at the time of the inspection but were not identified by Facility staff during the inspection, including the following (refer to Photograph 20): - Scum Pump No. 4; - Recirculation Pump Nos. 1 and 2; - Chemical Feed Pump No. 2; - TWAS No. 1; - TWAS No. 4; - RAS No. 1; - RAS No. 3.	- Scum Pump No. 4 was replaced on November 3, 2017. - Recirculation Pump No. 1 required replacement parts for its rotating element. The replacement parts were received on September 17, 2017. The repaired rotating element was returned to the plant on February 23, 2018. The pump will return to service by April 30, 2018. - Recirculation Pump No. 2 was overhauled and returned to service on June 28, 2017. - Chemical Feed Pump No. 2 was replaced with a new pump assembly and returned to service on October 6, 2017. - TWAS No. 1 was overhauled and returned to service on May 3, 2017. - TWAS No. 4 was overhauled and returned to service on September 27, 2017. - RAS No. 1 was overhauled and returned to service on July 28, 2017. - RAS No. 3 was overhauled and returned to service on March 28, 2017.
18	12	Inspection Findings -	The Permittee did not comply with the monitoring or reporting requirements contained in Section A.1 as	Mitigative efforts were also reported for all incidents in each applicable DMR.

		Monitoring	summarized below during the period of review. It should be noted that the Permittee self-reported the following incidents to HDOH in each applicable DMR.	
19	13	Inspection Findings - Monitoring	The Facility representatives stated that a final WET test was conducted on April 18, 2017, and that laboratory personnel was anticipating the results on April 19, 2017 (the day of this inspection). They stated that if the WET test passed, the Facility would return to normal WET test frequency.	The accelerated WET test conducted on April 18, 2017, resulted in "pass," and normal WET testing resumed in May, 2017, as reported in the April DMR dated May 25, 2017 (EMC-17-072).

Attachment 2 – Permittee's Response to March 29, 2019 Compliance Evaluation Inspection (30Sep19ResponseHNWWTPCEI Report.pdf)

CCH ENV Responses to Honouliuli WWTP NPDES HI 0020877 Compliance Evaluation Inspection (CEI) Report July 31, 2019

Item No.	Page No.	Section & Paragraph	CEI Report Findings	CCH ENV Response
1	2	Introduction	The Permit became effective on March 30,2014, was modified on October 1, 2015, and was set to expire on February 27, 2019, but has been administratively extended.	The permit was further modified in 2019 and the modification was effective on February 1, 2019.
2	8	Inspection Findings – Operation and Maintenance a. Grit Screening/ Headworks	i. Bar Screen No. 3 was out of service for replacement at the time of the inspection (refer to Photograph 1). We observed the entire screening unit to be removed from the housing. Mr. Salas stated that the Facility could be operated properly utilizing the other two operational bar screens.	CCH is in the process of obtaining the material and parts to rebuild Bar Screen #3. The work is scheduled to be completed by the end of November 2019. Given the average daily flow rate to the HWWTP, two (2) bar screens are required to be in service per the 2012 Facility-Wide Operations Manual.
3	8	Inspection Findings – Operation and Maintenance a. Grit Screening/ Headworks	ii. We observed the screenings conveyor at the influent bar screens to be significantly corroded (refer to Photograph 2). Mr. Salas stated that he believed the unit needed to be repaired or replaced. He stated that headworks improvements would be made as part of the plant upgrade work initiated to comply with the Facility's consent decree.	After evaluation to determine whether to repair or replace the unit, CCH is proceeding with replacement. The work is scheduled to be completed by the end of December 2019.
4	8	Inspection Findings – Operation and Maintenance a. Grit Screening/ Headworks	iii. We observed that the concrete collars surrounding the influent flow meters were cracked (refer to Photographs 3 and 4). A similar observation was made during the 2017 inspection. Facility representatives stated that a structural engineer evaluated the collars and determined the cracks did not cause an integrity issue. The engineer's report was not available onsite at the time of the inspection.	The structural engineer's report is available on site. The concrete collar was repaired in the week of September 1, 2019.
5	9	Inspection Findings – Operation and Maintenance	iv. Several tank covers and odor control covers at the pre-aeration tanks were deteriorating or broken (refer to Photographs 5 through 7). The Permittee had recently replaced a few covers on Tank No. 4 with new aluminum covers (refer to Photograph 7), and Mr. Salas stated that the Permittee was soliciting bids for	Prior to the inspection, a few covers on Tank No. 4 had been replaced with temporary wooden covers that were painted silver. The silver paint protects the covers from environmental exposure (e.g.

		a. Grit Screening/ Headworks	replacement of all covers with new aluminum covers, to be completed in summer 2020.	moisture and sunlight), and also acts as a reflector. Photo 7 shows these temporary wooden covers. Pre-aeration tanks are rotated in and out of service in general accordance with maintenance schedules, which are adjusted based on operational issues and priorities. The plant has been using 3 tanks (2, 3 and 4) from February through September 2019. The 4 tanks are parallel to each other within the same superstructure. Tanks 1 and 4 are on the outside (South and North sides), while 2 and 3 are in the interior. There is some access to Tanks 1 and 4 from the side walkways of the superstructure. Safe access to Tanks 2 and 3 is very limited. . Descriptions of tank cover repair progress is detailed below: Tank 4 is currently in service. At the time of the inspection there was a hole in one cover that was temporarily patched with plywood, as shown in Photograph 6. When it is rotated off-line, CCH will inspect each cover and make any necessary repairs. Tank No. 3, an interior tank, had 8 broken covers at the time of the inspection. This tank was rotated

				off-line on September 13, 2019. CCH is in the process of inspecting each cover and replacing any broken covers with new temporary wooden covers. The work is expected to be complete by the end of October 2019. Tank 2, an interior tank, is currently in service. At the time of the inspection there were 2 broken covers. When it is rotated off-line, CCH will inspect each cover and replace broken covers with new temporary wooden covers. Tank 1 was out of service at the time of the inspection, and remains out of service until repairs are complete. CCH is currently evaluating the covers and will replace any broken covers with temporary wood covers by the end of December 2019. CCH has not detected elevated H2S readings around the area and no odor complaints have been received that can be attributed to the broken covers. The plant DRC has notified all plant personnel of the broken covers. The area around the broken covers has been demarked with yellow caution tape to remind operators to stay away from the area to address safety concerns.

				CCH is currently executing a plan to replace all of the covers (on all tanks) with new aluminum covers by the end of 2020.
6	9	Inspection Findings – Operation and Maintenance b. Solids Handling	i. Gravity Thickener Nos. 3 and 4 had been permanently taken out of service and were awaiting demolition. Mr. Salas stated that the Facility only needs one thickener to process primary sludge. Gravity Thickener Nos. 1 and 2 were operational.	Gravity Thickener Nos. 3 and 4 were demolished on April 12, 2019. Only one gravity thickener is required to be in service per the 2012 Facility-Wide Operations Manual. Gravity Thickener Nos. 1 and 2 remain operational.
7	9	Inspection Findings – Operation and Maintenance b. Solids Handling	ii. Gravity Belt Thickener No. 1 had a ripped belt at the time of the inspection and was out of service. A similar observation was made during the 2017 inspection. Mr. Salas explained that the unit had been repaired after the 2017 inspection, but had ripped again. He stated that the belt tension likely needs to be adjusted.	CCH was informed by the manufacture that the parts needed to make the repair are no longer available. CCH is in the process of appropriating funds for a new gravity belt thickener unit.
8	9	Inspection Findings – Operation and Maintenance b. Solids Handling	iii. Digester No. 3 was out of service at the time of the inspection. Mr. Salas stated that the pressure readers were being replaced in response to issues the Facility was having with foaming in the unit.	Digester No. 2 and No. 3 were in service during the inspection and continue to be in service. Digester No. 1 was not in service during the inspection and will be available for service by the end of January 2020.
9	9	Inspection Findings – Operation and Maintenance b. Solids Handling	iv. Solids Centrifuge Nos. 2 and 3 were out of service at the time of the inspection (refer to Photograph 20). Centrifuge No. 2 was in need of back drive repair, and No. 3 needed to be rebalanced. Mr. Salas stated that the Facility is able to run properly with only one centrifuge in service.	Currently centrifuges No. 1 and No. 3 are in-service. No. 2 will be sent for balancing due to high vibration. Based on the present sludge feed rate from the digester tanks to the centrifuge, only one centrifuge unit is required to be in service per the 2012 Facility-Wide Operations Manual..
10	9	Inspection Findings – Operation and Maintenance	The Facility was utilizing the splitter box's backup channel at the time of the inspection. At the time of the 2017 inspection, Facility representatives stated that the splitter box contained an eroded concrete substrate which was in need of replacement. Since that time,	The main channel work is estimated to be completed and in service by the end of January 2020.

		c. Primary/Secondary Wastewater Splitter Box	most of the work had been completed and we observed that the main channel was near ready to be placed back into service (refer to Photograph 10).	
11	9	Inspection Findings – Operation and Maintenance d. Return Flow Pump Station	The Facility was using a temporary in-plant return flow pump station because the Facility did not have a permanent return flow pump station at the time of the inspection. Facility representatives stated that the secondary upgrades for the Facility included the construction of a permanent in-plant return flow pump station. A similar observation was made during the 2017 inspection.	A new temporary pump station is being constructed because the existing return pump station has insufficient capacity to handle the process side stream flow. The construction is estimated to be completed by the end of March 2020. A permanent return pump station will be constructed with the secondary treatment upgrade with completion expected in 2024.
12	10	Inspection Findings - Monitoring	2. The Permittee failed to collect influent composite samples for TSS and BOD on December 12, 2018. Specifically, the Facility's influent sampler pump failed as the sample tubing lost rigidity, resulting in an insufficient composite sample volume. The Permittee provided a noncompliance report, which was included in the December 2018 DMR, for each of the events (refer to Exhibit 1). Composite sampler failures were also observed during the 2017 inspection.	As stated in the December 12, 2018 noncompliance report, CCH has switched to a different tubing brand and has not since experienced a rigidity issue. CCH provided the mitigative efforts on all of the NPDES permit noncompliance reported in the monthly DMRs. CCH is routinely replacing consumable parts as part of the sampler preventive maintenance program and is taking action as appropriate to prevent the downtime of the samplers.
13	10	Inspection Findings – Effluent and Receiving Water	3. NPDES Permit No. HI0020877, Part B, Section B.6 requires the Permittee to conduct accelerated toxicity testing (once every 14 days) if toxicity is detected. The Permittee exceeded chronic toxicity for T. gratilla three times during the period of review, December 11 and 26, 2018, and January 21, 2019. The Facility was under accelerated monitoring for WET at the time of the inspection. The Permittee included these results in the applicable DMRs (refer to Exhibits 2 and 3).	The accelerated monitoring observed during the 2017 inspection began on November 29, 2016 after the initial test failure occurred on Nov 22, 2016. The monitoring ended in April 18, 2017 after passing six(6) consecutive tests, The Facility returned to the normal testing frequency in May 2017. The accelerated WET monitoring that occurred at the time of this inspection began on December 27,

			Facility representatives indicated that the exact cause of the failures was unknown; however, based on Toxic Identification and Evaluation (TIE) studies performed in March 2017 and January 2018, they suspected surfactants in the facility's influent were a major contributor of toxicity. Facility representatives also stated that Final Clarifier No. 1 was out of service for repair during December 2018 and January 2019, meaning there was a higher ratio of primary- to secondary - treated effluent being discharged when the WET tests failed. WET test failures were also observed during the 2017 inspection, and the Facility was also under accelerated monitoring at that time. Normal WET testing resumed in May 2017, but has since been accelerated again due to the failed tests described above. CCH submitted another TIE on January 28, 2019. The plan described the TIE studies on failed toxicity results for the May 30, 2018 sample, the March 21, 2017 sample, and the May 6, 2015 sample. The three TIEs generally implicated nonpolar organic compounds as major contributors to effluent toxicity. However, it was not clear from the submittal if the evaluation had progressed beyond the Phase I Toxicity Characterization to initiate the Phase II Toxicity Identification, which "uses treatment and toxicity testing techniques similar to Phase I and incorporates chemical-specific analysis to identify the toxicants" and then Phase III: Confirmation to confirm and further evaluate toxicity, including Refractory Toxicity Assessment (step 10) if needed. As indicated, the facility has exceeded WET limits on multiple occasions but has been unable to further identify or characterize the toxicant in order to prevent future exceedances.	2018. The monitoring ended on April 16, 2019 after passing six (6) consecutive tests. The Facility resumed to normal WET testing in May 2019. Currently, Honouliuli WWTP is no longer in an accelerated testing mode. The latest modification of the Honouliuli WWTP NPDES Permit effective February 1, 2019, This modification changed the Instream Waste Concentration and added two test species, to the WET test using T. *gratilla*,C.*dubia* and A. *affinis* of which are being rotated quarterly. There has not been a WET test exceedance of using the two additional test species. CCH's Water Quality Laboratory (WQL) does not have the High Performance Liquid Chromatography analytical capability to conduct the TIE Phase II studies. The WQL is currently evaluating options for using both a TIE Phase II consultant and a contract laboratory to conduct Phase II testing. The use of local Hawaiian species, T. *gratilla*, makes it logistically difficult to utilize a mainland contract laboratory to conduct the Phase II testing. The WQL does not anticipates the TIE Phase III Identification studies can be conducted for surfactants as they are a large class of different compounds.

			WET tests have indicated toxicity at 0.7% effluent, suggesting the toxicant may be at high enough concentrations in the wastewater to be identifiable through further Phase II or Phase III identification.	
14	11	Inspection Findings – Additional Observations from the Inspection	There were 12 required operator positions vacant at the time of the inspection (out of 24 total; refer to Exhibit 4), including 10 vacancies (out of 12 positions} in the Grade IV category. The Facility had 11 operators classified as Grade I or assistant, which are not required positions for the Facility. Mr. Salas explained that CCH has increased its effort since the 2017 inspection to train up operators and has established an in-house wastewater operator training academy in hopes of helping current staff obtain higher certifications and move into vacant positions. It should be noted that all five supervisor positions were staffed with Grade IV-certified operators.	Current staffing is as follows: The organizational chart currently has 43 positions, with 12 vacant. Eight out of the 12 vacant positions are actively being filled: 1 assistant wastewater plant operator (AWWTPO) interview was conducted on August 8 and 9, 2019; 7 Grade IV operator interviews were conducted on August 14, 2019. CCH is currently working on filling Grade II operator positions (4 open positions August 20, 2019).
15	11	Inspection Findings – Additional Observations from the Inspection	Based on improvements observed between the 2017 inspection and the 2019 inspection, as well as discussions with Facility representatives, maintenance at the Facility is progressively becoming more proactive in nature. We observed 67 open operator work orders at the time of the inspection; however, not all of the orders were relevant to treatment units. Numerous work orders pertained to other types of assets, such as fleet vehicles. Mr. Salas explained that he has been working with Facility operators to implement a process to address outstanding preventive and corrective maintenance tasks, starting at the headworks and methodically working through the entire plant to repair and maintain equipment. He stated this approach has helped in clearing long-standing backlog items.	CCH continues its progress to complete outstanding Work Orders and have instituted WAM tracking to report Work Orders issued and Work Orders outstanding. CCH has instituted new reporting so that future reports will only show those Work Orders relevant to treatment units.